

Having described the invention, the following is claimed:

1. An electrically actuatable igniter comprising:
a pair of electrodes;
a heating element electrically connected between said electrodes; and
an ignition material in contact with said heating element, said ignition material comprising a metal powder and an oxidizer that exothermically reacts with said metal powder, said metal powder including macro-agglomerates of metal particles, said metal particles having an average diameter less than about 0.1 μm and having an oxide layer that prevents contact of said particles with said oxidizer, wherein said ignition material deflagrates when the heating element is heated to a temperature of at least about 250°C..
2. The electrically actuatable igniter of claim 1 wherein the macro-agglomerates have an average diameter of about 1 μm to about 2 μm .

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3. The electrically actuatable igniter of claim 1 wherein said oxidizer is selected from the group consisting of alkali metal nitrates, alkaline earth metal nitrates, alkali metal perchlorates, alkaline earth metal perchlorates, alkali metal chlorates, alkaline earth metal chlorates, ammonium perchlorates, ammonium nitrate, and mixtures thereof.

4. The electrically actuatable igniter of claim 3 wherein the oxidizer has an average particle size of about 1 μm to about 30 μm .

5. The electrically actuatable igniter of claim 1 wherein the metal powder is selected from the group consisting of electro-exploded aluminum powder, electro-exploded titanium powder, electro-exploded copper powder, electro-exploded zinc powder, and electro-exploded yttrium powder.

6. The electrically actuatable igniter of claim 5 wherein the electro-exploded metal powder is electro-exploded aluminum.

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11. An electrically actuatable igniter comprising:
a pair of electrodes;
a heating element electrically connected between
said electrodes; and
an ignition material in contact with said
heating element, said ignition material comprising an

electro-exploded metal powder and a particulate oxidizer, wherein said ignition material deflagrates when the heating element is heated to a temperature of at least about 250°C.

12. The electrically actuatable igniter of claim 11 wherein said oxidizer is selected from the group consisting of alkali metal nitrates, alkaline earth metal nitrates, alkali metal perchlorates, alkaline earth metal perchlorates, alkali metal chlorates, alkaline earth metal chlorates, ammonium perchlorate, ammonium nitrate, and mixtures thereof.

13. The electrically actuatable igniter of claim 12 wherein the oxidizer has an average particle size of about 1 μm to about 30 μm .

14. The electrically actuatable igniter of claim 11 wherein the metal powder is selected from the group consisting of electro-exploded aluminum powder, electro-exploded titanium powder, electro-exploded copper powder, electro-exploded zinc powder, and electro-exploded yttrium powder.

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15. The electrically actuatable igniter of claim 11 wherein the electro-exploded metal powder is electro-exploded aluminum.

16. The electrically actuatable igniter of claim 11 wherein the electro-exploded metal powder is about 15% to about 75% by weight of the ignition material.

17. The electrically actuatable igniter of claim 11 wherein the amount of oxidizer is about 25% to about 85% by weight of the ignition material.

18. The electrically actuatable igniter of claim 11 wherein the ignition material upon deflagration produces an ignition product with a temperature of about 3000°C to about 6000°C.

19. The electrically actuatable igniter of claim 11 wherein the ignition material does not thermally decompose at temperatures up to about 120°C.

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